

## REMARKS

### Drawing Correction

A review of the specification revealed a duplicative use of the reference numeral 14. Paragraph 12 has been amended to change the identification of the ribs to reference numeral 13. A corresponding change will need to be done to Figure 1.

It is requested that submission of a replacement Figure 1 be held in abeyance until a notice of allowance is issued in the present application.

### 35 U.S.C. § 103(a)

Claims 1-7 and 9 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Fukata et al (WO 95/18022) in view of Heinen (US 6,415,835). This rejection is respectfully traversed for the following reasons.

Fukata et al and Heinen are applied herein as teaching a groove constructions having a series of peaks in the grooves extending from one groove sidewall to the opposing groove sidewall. Applicant respectfully disagrees with the applicability of Fukata et al and Heinen with respect to the presently claimed invention.

Claim 1 recites that the groove has a plurality of “spaced projections” in the base of the groove. All of the provided Figures clearly indicate that by “spaced,” the projections are not directly adjacent to one another, but a section of the original groove base is present between the projections. While the word “spaced” is not explicitly defined in the specification, the ordinary use of the word “spaced” is applicable herein. Webster defines “space” and “spaced” as to place at intervals or arrange with space between, space being a blank area.

Fukata et al specifically defines the taught invention as “a continuously waved bottom” and actually teaches that the invention is not a spaced set of projections – see page 9, lines 7-17 wherein Fukata et al teaches that if the groove base projections are spaced at regular intervals, the desired wave motion “effective to divide water held in the groove into small lumps” is not achieved and there is little effect in discharging water out of the groove. Thus Fukata et al clearly does not desire and teaches away from “spaced projections” as disclosed and recited by Applicant. Heinen does not remedy this negative teaching of Fukata et al, and shows continuous waves along the groove.

Regarding the inclination angle of the wave projections of Fukata et al as modified by Heinen, Applicant respectfully disagrees. Fukata et al specifically teaches that the goes is to

break the water into “small lumps” for discharge from the grooves. Heinen teaches disrupting current flow along the groove, preventing the water from creating eddies along the sides of the grooves. These flow mechanisms desired by Fukata and Heinen are very different. There is no reasonable expectation that if the waves of Fukata are inclined at angles of 45° to 90° that the same water effect as desired by Fukata will be achieved.

Additionally, the calculations regarding the recited ratio of P/L as applied to Fukata et al are incorrect. In the present application, the length of the projection is measured from one end to the opposing end of the projection – see para 15 and Figure 3. For Example 1 of Fukata, if the sine formation is inclined at a 45° angle, as suggested in the rejection, with a max thickness of 3.5 mm, the length of the wave, as measured along the groove centerline is actually approximately 7.5 mm, not 4.0 as set forth in the Office Action. This results in a ratio of P/L of about 0.667 – below the recited range of 0.75 – 1.25. Attachment A is provided for reference – wherein the scale of the groove and wave is increased by a factor of 10 for ease of understanding and calculations.

Regarding claim 2 recited a maximum radial height of 35% of the groove depth for the projections, Applicant disagrees with the position set forth in the Office Action. Fukata et al does disclose that the wave height can vary from 1 to 4 mm; but never expresses the height in terms of the groove depth. Any such guidance is provided in the examples. A review of all the examples shows only two different height/depth ratios. For a tire having a groove depth of 6 mm, the wave has a height of 3 mm (examples 1-2) and for a groove depth of 3 mm, the wave has a height of 2 mm (examples 3-8). Thus Fukata teaches a projection height to groove height value of 50% and 66.7% - both values well above the recited maximum of 35%. To posit that Fukata et al teaches a 1 mm wave in a 6 mm groove depth to achieve a height within the present claim is purely speculative and has no basis in the prior art. One skilled in the art would be subject to undue experimentation to determine if such a small projection in such a deep groove would achieve Fukata’s desired wave effect of dividing the water into small lumps resulting in the rapid discharge of the water from the groove.

As Fukata et al. in view of Heinen fails to establish *prima facie* obviousness of the invention as recited in claims 1-7 and 9, it is respectfully requested that the rejection be withdrawn.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fukata et al in

view of Heinen and further in view of Shesterkin (US 2,268,344). This rejection is respectfully traversed for the following reasons.

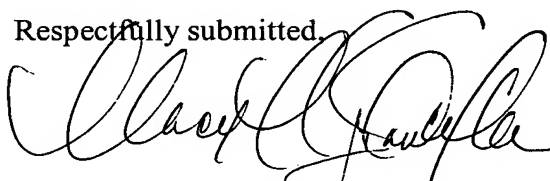
Shesterkin discloses projections in the tread. Figures 2 and 4, noted in the Rejection, shows the mold used to form the tire of Shesterkin. While the projections in the tread mold might suggest a curved configuration, the cross-sectional views of the formed do not show a curved configuration as recited.

Additionally, Fukata et al specifically teaches against having spaced projections in the groove base, the teachings of Shesterkin are contrary to the teachings of Fukata et al.

As Fukata et al. in view of Heinen and further in view of Shesterkin fails to establish *prima facie* obviousness of the invention as recited in claim 8, it is respectfully requested that the rejection be withdrawn.

In light of these arguments, Applicant believes all of the claims pending in the subject patent application are allowable. Thus, the Examiner is respectfully requested to allow all pending claims.

Respectfully submitted,



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